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Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

Submitted online at: www.aemc.gov.au

Dear Project Leader

Submission: Contingency Frequency Control Ancillary Services rule changes

CS Energy welcomes the opportunity to provide a submission in response to the Australian Energy Market Commission's (**AEMC's**) *Consultation Paper – Contingency Frequency Control Ancillary Services (FCAS) rule changes (Consultation Paper)*.

About CS Energy

CS Energy is a Queensland-owned and based energy company that provides power to some of the State's biggest industries and employers. We generate and sell electricity in the wholesale and retail markets, and we employ almost 700 people who live and work in the regions where we operate.

CS Energy owns thermal power generation assets, and we are building a more diverse portfolio. We also have a renewable energy offtakes portfolio of almost 300 megawatts, which we supply to our large commercial and industrial customers in Queensland. CS Energy is developing a 400 MW gas-fired peaking generator at Brigalow near Kogan Creek in Queensland.

Overall views

As the National Electricity Market (**NEM**) transitions to a system with more variable renewable energy (**VRE**), the ability to effectively and efficiently manage grid security and reliability against this evolving landscape is critical. In this context, fit-for-purpose FCAS market frameworks are crucial to facilitate efficient investment, operational decision-making and maintenance of system security at least cost in the NEM.

CS Energy does not support the proposed contingency FCAS rule changes on the basis that these proposals would lead to detrimental effects on long-run investment efficiency and derivative contract market liquidity. Further, any potential benefits stemming from the rule proposals would be significantly outweighed by the material erosion of efficiency in the spot and contract markets, given the substantially smaller FCAS market relative to the previously mentioned markets.

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Detailed comments

To maintain grid security, the NEM's system frequency needs to be maintained at 50 Hertz.¹ Contingency FCAS is designed to restore system frequency following a contingency event (i.e. unplanned loss of generators, loads or network elements).

The Australian Energy Market Operator (**AEMO**) enables the volume of contingency FCAS needed to maintain system security principally based on the size of the largest credible contingency arising from the wholesale market dispatch. However, besides co-optimisation between energy dispatch and FCAS enablement to achieve overall lowest cost, AEMO typically does not optimise for the size of the largest contingency except for specific system security conditions.²

The proponent of the rule changes (Grids Energy) submitted that an obligation should be placed on AEMO to optimise the size of contingencies by constraining generation or load of the largest scheduled or semi-scheduled units when it reduces the volume required for contingency FCAS, leading to lower overall costs.

Grids Energy also proposed recovering contingency FCAS costs using a 'runway' cost allocation methodology based on dispatched unit size instead of the current approach of allocating costs in proportion to energy generated or consumed. The key implication of the 'runway' methodology is the allocation of a greater share of costs to the larger units while substantially reducing the costs for smaller units.

CS Energy does not support these proposed rule changes. We consider they would have negative impacts on:

- Long-run investment efficiency by undermining the commercial viability of larger plants due to higher allocation of FCAS costs and forgone revenues from the spot and derivative markets (owing to actual or potential curtailment). Larger units (both VRE and synchronous plants) provide broader efficiency benefits through economies of scale and higher fuel/thermal efficiency. Larger synchronous units also supply a higher level of system strength and inertia due to their heavier mass. Unwarranted reduction in the commercial viability of larger plants would result in less investment in such units, which leads to material efficiency losses that would increase the costs for consumers in the long run; and
- Derivative contract market liquidity by decreasing the willingness of larger generators to offer swaps, caps and options due to the risks of curtailment undermining the ability of these plants to defend their contractual positions. Larger scheduled plants are the predominant source of electricity derivatives because of their controllability, which allows them to better manage price volatility within the NEM. Reduced contract liquidity will have detrimental effects not only on price discovery but also the ability of retailers to hedge price/volume volatility, ultimately increasing costs for consumers.

The efficiency losses in the spot market and reduction in contract liquidity would significantly outweigh any potential benefits stemming from the rule proposals, given the substantially smaller FCAS market relative to both spot and derivative markets. Further, the costs of contingency FCAS are expected to decline further due to the influx of battery energy storage systems (**BESS**) increasing the supply of FCAS, therefore reducing the benefits of the proposed changes.

¹ This means that alternating current cycles 50 times a second between positive and negative voltage.

² These include conditions where there is a scarcity of FCAS due to islanding and a network contingency situation where large amount of generation is at risk (i.e. >1.5 times of the largest generating unit).

CS Energy is also concerned that no detailed quantitative analysis has been undertaken to assess the potential benefits and costs of the proposed rule changes. It is recommended that the AEMC undertakes such an analysis and releases its findings in a directions paper for consultation prior to proceeding to the draft determination.

It is also unclear whether the implementation of contingency size optimisation is technically feasible from AEMO's perspective. CS Energy considers that such an implementation is likely to be complex and costly due to the need for individual FCAS constraint equations to be written for each large unit within the NEM Dispatch Engine (**NEMDE**). It is understood that NEMDE is already experiencing delay issues under specific circumstances and additional optimisation processing is likely to compound this issue.

The AEMC should also consider the impact of renewable energy zones (**REZs**) on contingency size optimisation and the application of a 'runway' cost allocation, specifically how cost-recovery would apply to individual generators within a REZ where the REZ is the largest credible contingency.

If you would like to discuss this submission, please contact Wei Fang Lim, Market Regulatory Manager, on either 0455 363 114 or wlim@csenergy.com.au.

Yours sincerely



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